
Pharmacists as Architects of a Healthy World: Today, Tomorrow, and Forever - An Emic Perspective

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ABSTRACT

Pharmacists are important members of the healthcare team who play a crucial role in ensuring patient safety and improving health outcomes. They play a key role in dispensing of medications, providing medication management services, monitoring adverse events, patient counselling, thus ensuring that patients are taking their medications safely and effectively. They are responsible for the well-being of individuals, local residents and whole communities. They serve as professional advisors and counsellors and support the physicians in ensuring the well-being of the local people. As a part of the Indian Pharmaceutical industry, they play a valuable role in the uninterrupted supply of affordable quality medicines all across the globe. Pharmacists are multi-faceted, multi-talented professionals dedicated to upholding the Pharmacists Oath taken by them. This article explores the role of the pharmacists in healthcare and elaborates on their involvement as partners in patients' health.

Keywords: *Pharmacist; HealthCare; Health Partner; Medication management*

INTRODUCTION

Pharmacists are the unsung heroes of the healthcare world, often working behind the scenes to ensure that patients receive the right medications and proper guidance for their well-being. In this ever-evolving landscape of healthcare, pharmacists are instrumental in safeguarding patient safety, optimizing treatment outcomes[1,2] and contributing to medical advancements. This paper delves into various facets of the pharmacy profession, from their crucial role in patient care¹ to their role as innovators and technocrats, ultimately highlighting how pharmacists star as indispensable partners in our collective pursuit of better health.

The Role of Pharmacists in Healthcare

Pharmacists are experts in medications and their use. They work closely with physicians and other healthcare providers to ensure that patients receive the correct medications and dosages for their specific conditions[3]. Pharmacists review medication orders, assess drug interactions and allergies, and monitor for adverse drug reactions. They also instruct and counsel patients on how to take their medications, their potential side effects, and drug interactions.[4,5]

In addition to dispensing medications, pharmacists are also involved in medication management services, such as medication therapy management (MTM)⁶. MTM involves reviewing a patient's medication regimen and working with the patient to optimize their medication therapy[2]. This includes identifying and resolving medication-related problems, such as inappropriate dosages or drug interactions, and providing education and counselling on medication use.

1. Pharmacists as caretakers of community:

a. Pharmacists are widely accessible health professionals.

These days, people are constantly on the move. With busy schedules and lots of commitments, it can be easy to forget to prioritize healthcare. That's where pharmacists come into the picture.

Pharmacists make it easier and more convenient for people to maintain their health by offering basic testing and wellness services (viz. blood pressure measurement, preventative vaccines, etcetera) in almost any location[4].

With highly trained and knowledgeable health professionals so readily accessible, people can conveniently prioritize their health and well-being.

b. Pharmacists serve as an essential part of the healthcare team.

Most people have a team of health professionals consisting of their primary care[1] practitioner, specialist doctors, and sometimes even dentists and ophthalmologists. But, often, people don't realize that pharmacists are also an integral part of these teams.

A pharmacist's role within a healthcare team is to serve as the medication expert. As such, pharmacists work with other trusted medical professionals to identify problems and set appropriate courses of action to help patients live their healthiest lives[1,4].

c. Pharmacists help ensure the best patient outcomes.

Pharmacists are an essential part of any team of health professionals because they serve as medication experts.

Because of this designation, doctors in other specialty areas rely on pharmacists to provide recommendations for medication to manage acute illnesses, chronic diseases, and quality of life care. In other words, pharmacists are patients' partners in living their healthiest lives.[7]

d. Pharmacists are highly educated and trained health professionals.

Pharmacists are highly educated health professionals. In fact, their education is among the most rigorous in the entire healthcare field.

Pharmacists are required to earn Diploma in Pharmacy or Bachelor of Pharmacy. This helps pharmacists better respond to the unique needs of their patients, so they can live healthier lives.

e. Pharmacists practice in diverse settings.

Pharmacists practice in many kinds of locations and capacities such as community pharmacies, government agencies, hospitals, clinics, and research settings.

In addition to dispensing medication, pharmacists also conduct research that can lead to medical advancements, create protocols, and even deal with compliance issues related to medication. These diverse settings give pharmacists the opportunity to help people live healthier lives in a variety of ways.[8]

2. Role of local pharmacies in improving healthcare:

Local pharmacies offer a wide range of services to their customers, beyond just dispensing medications. The specific services offered may vary depending on the pharmacy, but here are ten common services that many pharmacies provide:

- 1) **Medication dispensing:** The primary function of a pharmacy is to dispense medications prescribed by a doctor or other healthcare provider. Pharmacies ensure that patients receive the correct medication in the right dosage and format.
- 2) **Medication counselling:** Pharmacists are trained to provide medication counselling to patients, including information on how to take medications properly, potential side effects, and drug interactions. This service helps patients to understand their medications better and avoid potential problems[9].
- 3) **Health screenings:** Some pharmacies offer health screenings, such as blood pressure checks or cholesterol tests. These screenings can help patients identify potential health problems and take steps to address them[10,11].
- 4) **Medication synchronization:** Some pharmacies offer medication synchronization² programs, which help patients to coordinate their medication refills so that they can pick up all of their medications at once. This service can be especially useful for patients who take multiple medications or have busy schedules.
- 5) **Home delivery:** Many pharmacies offer home delivery services, which can be a great convenience for patients who are unable to leave their homes or have difficulty getting to the pharmacy.[6]
- 6) **Medication disposal:** Pharmacies often have medication disposal programs, which allow patients to safely dispose of unused or expired medications. This service helps to prevent medication misuse or accidental ingestion by children or pets[12].
- 7) **Diabetes management:** Some pharmacies offer diabetes management services, such as blood glucose monitoring and education on diabetes self-management. These services can help patients with diabetes to better manage their condition and avoid complications[10,13].
- 8) **Compounding:** Compounding pharmacies can create custom medications that are tailored to the specific needs of individual patients. This service is especially useful for patients who have allergies or other sensitivities to commercially available medications.
- 9) **Medical equipment and supplies:** Many pharmacies offer medical equipment and supplies, such as crutches, walkers, and wound care products. This service can be especially helpful for patients who need these items on a temporary basis or who do not want to purchase them outright.
- 10) **Pharmacists can offer affordable alternatives:** The pharmacist helps the patient to substitute a branded drug with a generic one in consultation with the doctor [14].

Overall, local pharmacies offer a variety of services to help patients manage their health and improve their quality of life. These services are an important part of the healthcare system and help to ensure that patients receive the best possible care.

3. Pharmacists as professional advisors and counsellors[15]:

Pharmacists are trained to provide advice and guidance to patients on over-the-counter remedies and supplements. Some types of advice given by pharmacists include

- 1) **Product selection:** Pharmacists can help patients choose the right over-the-counter remedy or supplement for their needs. They can recommend products that are appropriate for the patient's age, health condition, and other factors.
- 2) **Dosing:** Pharmacists can provide guidance on correct dosing of over-the-counter remedies and supplements. They can advise patients on how often to take the product, the appropriate dose, and any potential interactions with other medications the patient may be taking.

- 3) **Safety:** Pharmacists can advise patients on the safety of over-the-counter remedies and supplements. They can inform patients of potential side effects, interactions with other medications, and other safety concerns [6,16].
- 4) **Efficacy:** Pharmacists can provide information on the effectiveness of over-the-counter remedies and supplements. They can advise patients on whether a product is likely to be effective for their specific condition and suggest alternative products if necessary.
- 5) **Patient Education:** Pharmacists can educate patients on over-the-counter remedies and supplements, including how they work, potential benefits, and potential risks. This can help patients make informed decisions about whether to use a particular product.
- 6) **Review of Medication History:** Pharmacists can review a patient's medication history to identify any potential interactions between over-the-counter remedies or supplements and other medications the patient may be taking[17].
- 7) **Referral to a Healthcare Provider:** If a patient's symptoms or condition require medical attention, pharmacists can refer them to a healthcare provider for further evaluation and treatment[14].

Overall, pharmacists are well-equipped to provide advice and guidance to patients on over-the-counter remedies and supplements. They can help patients make informed decisions about these products, and provide *education* on safety, efficacy, and proper use[18].

4. Contribution of Indian pharmaceutical industry:

India's pharmaceutical sector forms a major component of the country's foreign trade, with attractive avenues and opportunities for investors. India is the largest provider of generic drugs globally. Indian pharmaceutical sector supplies over 50% of global demand for various vaccines, 40% of generic demand in the US and 25% of all medicine in the UK. Globally, India ranks 3rd in terms of pharmaceutical production by volume and 14th by value. The domestic pharmaceutical industry includes a network of 3,000 drug companies and around 10,500 manufacturing units.

With a well-established domestic manufacturing base and low-cost skilled manpower, India is emerging as a global hub for pharmaceutical manufacturing and the industry continues to be on a growth trajectory. Presently, over 80% of the anti-retroviral drugs used globally to combat AIDS (Acquired Immune Deficiency Syndrome) are supplied by Indian pharmaceutical firms.

The efforts of the Indian Pharmaceutical industry have been acknowledged by the Indian Prime Minister, Shri Narendra Modi who hailed India as the 'Pharmacy of the World' at the 1st Global Innovation Pharma Summit held on November 18th 2021. He further added that the combination of high quality and quantity at affordable prices has generated immense interest in the Indian pharma sector around the world.[19]

5. Pharmacist of the future:

The pharmaceutical industry is poised to leap into the future with high-tech innovations such as

- 1) **Artificial Intelligence:** AI is used in pharmacy for drug discovery, medication management, precision medicine, supply chain management, and patient engagement [19,20].
- 2) **Big Data and Analytics:** Big Data and Analytics are used in pharmacy for drug efficacy and safety[16], personalized medicine, population health management, pharmacy operations management, and clinical research.[20]
- 3) **Flexible Production:** Flexible Production is used in pharmacy for compounding, on-demand manufacturing, 3D printing, and continuous manufacturing.[20]

- 4) **Precision Medicine:** Precision medicine in pharmacy is an approach that tailors' medical treatments to individual patients based on their genetic, environmental, and lifestyle factors[20].
- 5) **Additive Manufacturing:** Additive Manufacturing, or 3D printing, is used in pharmacy to create personalized dosage forms, medical devices, drug delivery systems, and for formulation development [20,21].
- 6) **Blockchain:** Blockchain is used in pharmacy for supply chain management, clinical trial data recording, prescription drug monitoring, and patient data management.[21]
- 7) **Extended Reality:** Extended Reality (XR) in pharmacy includes virtual reality (VR), augmented reality (AR), and mixed reality (MR). XR is used for medical education and training, patient education and engagement, medication visualization, and pain management [20,22].
- 8) **Real World Data:** Real World Data (RWD) is data collected outside of traditional clinical trials, such as from electronic health records and patient-generated data. RWD is used in pharmacy for drug development, clinical decision-making, pharmacovigilance, and health economics and outcomes research [20].
- 9) **Digital Therapeutics:** Digital therapeutics (DTx) is the use of software, digital technologies, and mobile devices to deliver evidence-based therapies for medical conditions. DTx is used in pharmacy for chronic disease management, behavioural health, patient education and engagement, and clinical decision-making [20,23].
- 10) **Curative Therapies:** Curative therapies aim to provide a permanent cure for a disease or medical condition. Examples include gene therapy[2], stem cell therapy, and immunotherapy.[2]

CONCLUSION

Pharmacists play multiple roles to fulfil the needs of patients. They are medication experts who work in tandem with physicians and other healthcare workers providers to ensure that patients receive the correct medications and dosages for their specific conditions Pharmacists also provide medication management services, medication safety monitoring¹⁹, and education and counselling to patients. Pharmacists are innovators who design and develop new drugs and formulations for treating diseases – old and new. Pharmacists are technocrats who perceive many important health related societal problems as being solvable with the applied use of technology and related applications⁸. Pharmacists are entrepreneurs who serve the needs of the society by creating jobs and nurturing talent. In conclusion, pharmacists are versatile professionals with the training and competence to adapt to the health needs of the people.

Truly, pharmacists are our partners in health!

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